



United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

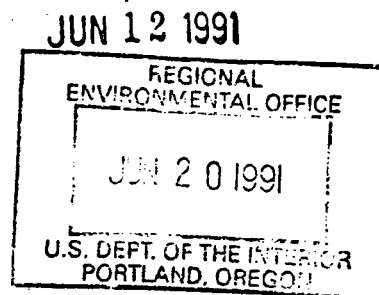
CSP
PAS

File: Monsanto
PNRS



ER 90/1088

Mr. Charles E. Findley, Director
Hazardous Waste Division
Environmental Protection Agency, Region 10
1200 Sixth Avenue
Seattle, Washington 98101



Dear Mr. Findley:

Pursuant to IAG No. DW 14-933167-01-2, the Department of the Interior has conducted a preliminary natural resources survey (PNRS) on the Monsanto Chemical Company site to determine whether the Secretary of the Interior's trust responsibilities are involved.

In conducting this PNRS several documents including the Site Inspection Report were reviewed. A bibliography of those documents is attached, for your information.

SITE DESCRIPTION

The 530-acre Monsanto Chemical Company (MCC) Site is located about 1 mile north of Soda Springs in Caribou County, Idaho. The MCC Site is located directly across State Highway 34 from the Kerr-McGee Chemical Corporation Site, which is also proposed for inclusion on the National Priorities List.

Significant fish and wildlife habitats located near the Monsanto Site include the Bear River and Alexander Reservoir, located about 2.5 miles southwest of the Site, and Formation Springs, a property owned by the Nature Conservancy located about 1.5 miles northeast of the Site. Grays Lake National Wildlife Refuge is located about 25 miles north of the site.

Alexander Reservoir, operated by Utah Power and Light, provides a marginal rainbow trout and yellow perch fishery. It was completely drawn down the past two winters for maintenance work at the dam. The Bear River below the Reservoir supports a fair rainbow trout fishery. Smallmouth bass have also been introduced into this reach.

Surface Water

The MCC Site is located within the Bear River Valley of southeastern Idaho. The Bear River enters Alexander Reservoir about 2 miles southwest of the site. Soda Creek, the nearest natural drainage to the site, flows within 2,000 feet of the

AR

7.1

7 1 002

6338

0003

western boundary of the site before entering Alexander Reservoir.

Testing of surface water samples by Ecology and Environment (1988a) revealed elevated concentrations of selenium, vanadium, and zinc at Mormon Springs, which surfaces near the southwest corner of the MCC Site and flows into Soda Creek and ultimately Alexander Reservoir. The effluent discharge water, which flows offsite near the southwest corner of the site and also enters Soda Creek, contains elevated concentrations of aluminum, cadmium, iron, selenium, and vanadium.

Groundwater

MCC is located on basalt, which is an extremely good aquifer with well yields as high as 3,500 gallons per minute. Groundwater occurs in both the bedrock and overburden deposits. The direction of groundwater movement in the vicinity of the MCC Site is generally to the west-southwest. Groundwater in the upper and lower basalt zones under the MCC Site flows towards the south-southwest.

This flow pattern has been influenced by pumpage of the supply wells on site which has created a cone of depression, and by a geologic fault that traverses the site. Groundwater is transferred to the surface in numerous springs found throughout the region. Several springs exist in the vicinity of the MCC site.

SITE HISTORY

This facility has produced elemental phosphorus (which is used primarily for the manufacture of phosphoric acid) since 1952. The plant generates several waste streams which contain inorganic compounds and metals. Most liquid and solid wastes are stored or treated in on-site disposal ponds or piles. Golder Associates identified several contaminant plumes in two aquifers beneath the site with elevated concentrations of metals and anions which originated in the locations of former unlined ponds and a hydroclarifier.

According to Ecology and Environment (1988a), "Groundwater under the site appears contaminated by various ions and metals including fluoride, cadmium, selenium, chloride, sulfate, and vanadium. The upper and lower basalt zones show evidence of contamination, with the contaminant plumes being more widely distributed and concentrated in the upper zone." The sources of the contaminants in the upper basalt zone are listed as the underflow solids pond, the northwest pond, and the hydroclarifier. The plumes follow the predominant groundwater flow direction to the south-southwest. The fluoride plume is the most widely dispersed; levels above background were detected south of the site's boundary at least as far as Mormon Springs

(which flows into Soda Creek). Selenium and sulfate plumes also extend beyond the site boundary, while cadmium, chloride, and vanadium plumes appear to be restricted to the site area. Cadmium and selenium were detected at concentrations above Federal Maximum Contaminant Levels (MCL) for drinking water in several of the wells tested.

The contaminants detected in the lower basalt zone included fluoride, cadmium, selenium, chloride, and sulfate. The plumes in this zone are smaller and less concentrated than those in the upper basalt zone, and appear to extend southeast from the old underflow solids area.

A separate plume of chloride, sulfate, and vanadium which may exist in the southeastern portion of the site appears to originate to the east of the MCC site.

Based on this information, contaminants in groundwater could move toward water-supply wells developed in the basalt aquifer near Soda Springs as well as the Bear River and Alexander Reservoir. However, if groundwater discharges to Soda Creek, and then is diverted for irrigation use into Soda Canal, which is located about 1 mile south of the plant, public lands in the Soda Springs Hills area or land adjacent to Soda Point Reservoir could be impacted.

TRUST RESOURCES

Migratory Birds

Key trustee species which inhabit the Bear River/Alexander Reservoir area include bald eagles, white pelicans, Canada geese, and several species of ducks and shorebirds. Canada geese are found in the area all year, and nest along the Bear River and Alexander Reservoir during late summer. Several species of ducks utilize the area during spring and fall migration.

Threatened and Endangered Species

About 10-12 bald eagles (endangered) winter in the Bear River/Alexander Reservoir area from Soda Springs downstream about 5 miles to Soda Point. Peregrine falcons and whooping cranes, both endangered, have been introduced into Grays Lake National Wildlife Refuge.

Tribal Resources

The site is within the judicially established exclusive use area (ceded area) for the Shoshone tribes. Thus, continuing releases of toxic materials from these sites probably have affected and will continue to affect plant and animal trust resources. Contamination of surface and groundwater by these emissions may

also be of concern since the region appears to drain through the Fort Hall Reservation.

BLM Lands

An 80-acre tract administered by the BLM is located 2.5 miles west of Soda Springs. It lies along the Soda Canal at a point 3.7 miles downstream from the canal diversion on Soda Creek. Discharge waters to Soda Creek were found to be contaminated in 1985. Therefore, contamination is likely to occur along Soda Canal from seepage.

CONCLUSIONS

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, Section 122(j)) provides that a Federal natural resource trustee may agree to a covenant not to sue if appropriate actions are taken to protect and restore natural resources injured or threatened by releases from the site. No sampling of biological resources has been done in the vicinity of the MCC Site, including the affected spring discharges, Soda Creek, Alexander Reservoir, or the Bear River below Alexander Reservoir. There appears to be a strong possibility that plant and/or animal species could be affected by the elevated concentrations of aluminum, cadmium, selenium, vanadium, zinc, or other chemical constituents that have been detected in Mormon Springs and the effluent discharge stream, both of which discharge into Soda Creek and eventually Alexander Reservoir. Also, several analytes, including vanadium, were detected in groundwater samples taken from the Kerr-McGee Site. There is some indication this contaminated groundwater may also be contributing to contaminants detected in groundwater and spring water samples taken from MCC Site. In order for us to reach a position on the effects of the site on natural resources, we would need further information. Sampling of biological matrices would be necessary to determine if harmful concentrations of these chemical constituents are accumulating in biological systems at potentially harmful levels. Biological sampling would need to be designed to address potential contaminants from both the Monsanto Chemical Company and Kerr-McGee Sites since it appears both sites may be contributing contaminants via spring discharge near Soda Creek.

The potential for impacts to trustee resources of the U.S. Department of the Interior from air emissions was not addressed in the Final Site Inspection Report. However, this potential pathway needs to be addressed since air pollution from the facility frequently drifts over habitats occupied by trustee resources.

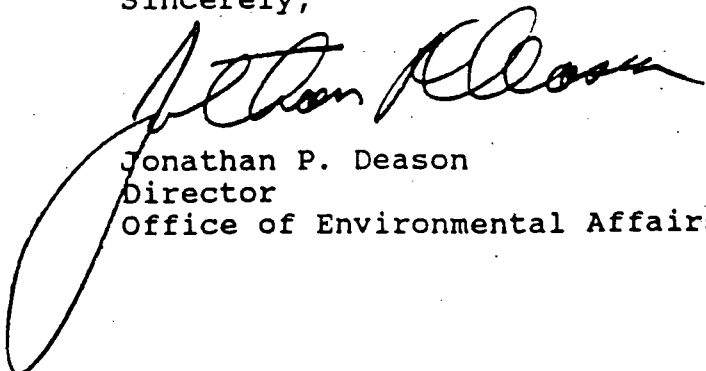
Information presented in the Ecology and Environment (1988a) Final Site Inspection Report indicates the probable release of several toxic inorganic constituents into springs which discharge into Soda Creek and ultimately Alexander Reservoir on the Bear River. Such discharges may be impacting natural resources under the trusteeship of the Department including migratory waterfowl, other migratory birds and endangered species.

Sampling of biological resources would assist us in determining the extent of biological contamination including food chain items and determine if potential pathways exist between observed discharges of contaminated groundwater and resources under the trusteeship of the Department of the Interior.

While we have been unable to identify any adverse affects to trust resources from the site based on existing information, we are concerned about injury to natural resources if contaminants are migrating from the site. Without further investigations, including sampling of biological resources both on and off the site to determine that contaminants are not accumulating in animal tissues via the food chain, we could not consider agreeing to a covenant not to sue for natural resources damage claims at this time. However, should the RI/FS and timely remedial action ensure that surface water and groundwater flows from the site are not affecting our trust resources, we would reconsider our position.

The Department of the Interior contact for this site is the Regional Environmental Officer in Portland, Oregon, Mr. Charles S. Polityka, 500 N.E. Multnomah Street, Suite 600, Portland, Oregon, 97232-2036, FTS 429-6157, who is also our Departmental Representative on the RRT. We also urge EPA to consult regional officials at our Fish and Wildlife Service, Bureau of Land Management, and Bureau of Indian Affairs offices for technical assistance in the development and approval of workplans, studies, data evaluations, and negotiations on remedial actions for the site.

Sincerely,



Jonathan P. Deason
Director
Office of Environmental Affairs

Enclosure

Bibliography

Ecology and Environment, Inc. 1988a. Site Inspection Report for Monsanto Chemical Company, Soda Springs, Idaho. TDD F10-8702-06. 29 pp.

Ecology and Environment, Inc. 1988b. Final Site Inspection Report for Kerr-McGee Chemical Corporation, Soda Springs, Idaho. TDD F10-8702-04. 50 pp.

Golder Associates.. 1985. Report on Hydrogeological Investigation, Soda Springs Plant Site (Volumes 1,2, and 3); Prepared for the Monsanto Chemical Company.